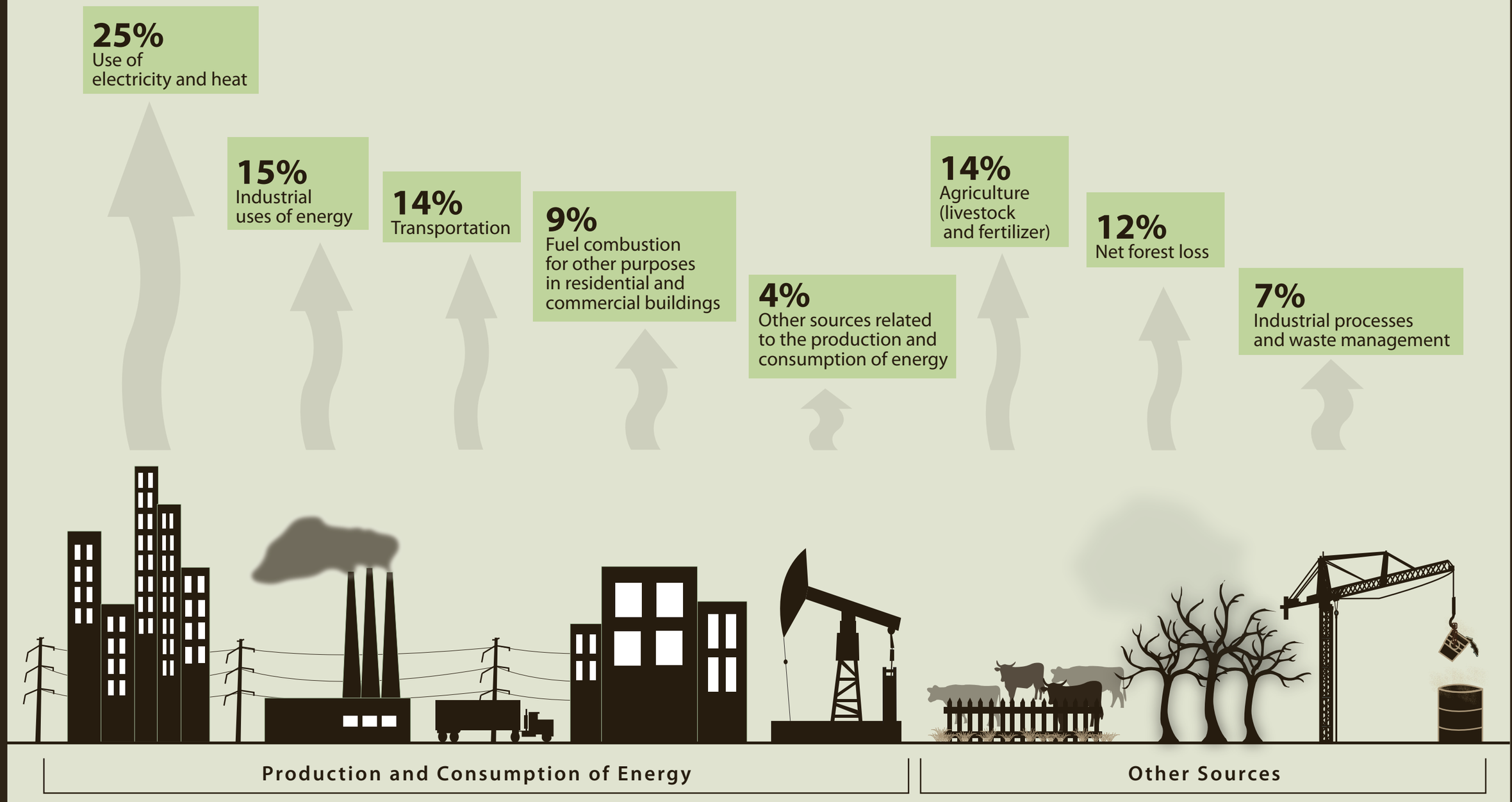
DEFORESTATION AND GREENHOUSE GASES

The destruction and degradation of forestland, caused mainly by expanded agricultural activity in tropical developing countries, currently accounts for roughly 12% of all greenhouse gas (GHG) emissions. Slowing or eliminating forest loss can potentially make a cost-effective contribution to an international effort to reduce global emissions, but that strategy faces a number of challenges.

GLOBAL EMISSIONS OF GREENHOUSE GASES

GHG emissions caused by human activity contribute to climate change. The use of electricity and heat, for example, is responsible for 25% of global GHG emissions. The destruction and degradation of forests contribute roughly 12%.



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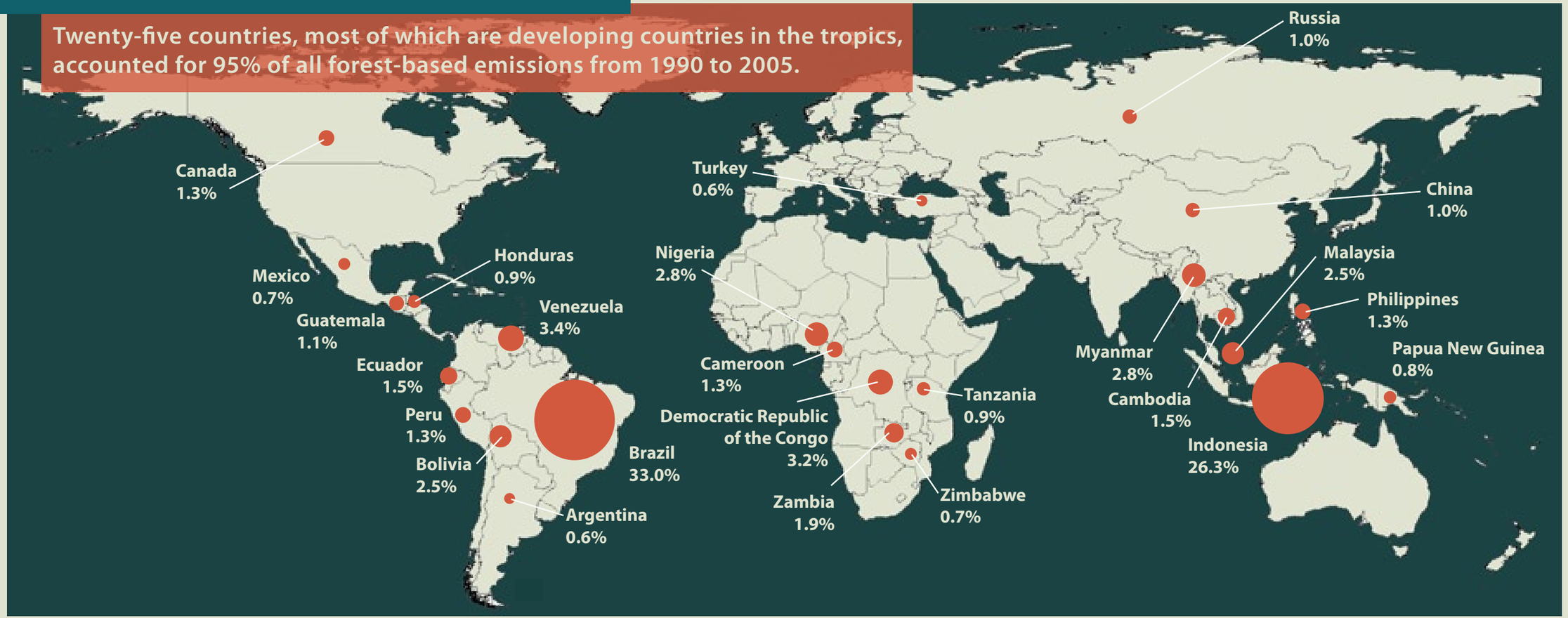
FORESTS AND GHG EMISSIONS

Twenty-five countries, most of which are developing countries in the tropics, accounted for 95% of all forest-based emissions from 1990 to 2005.

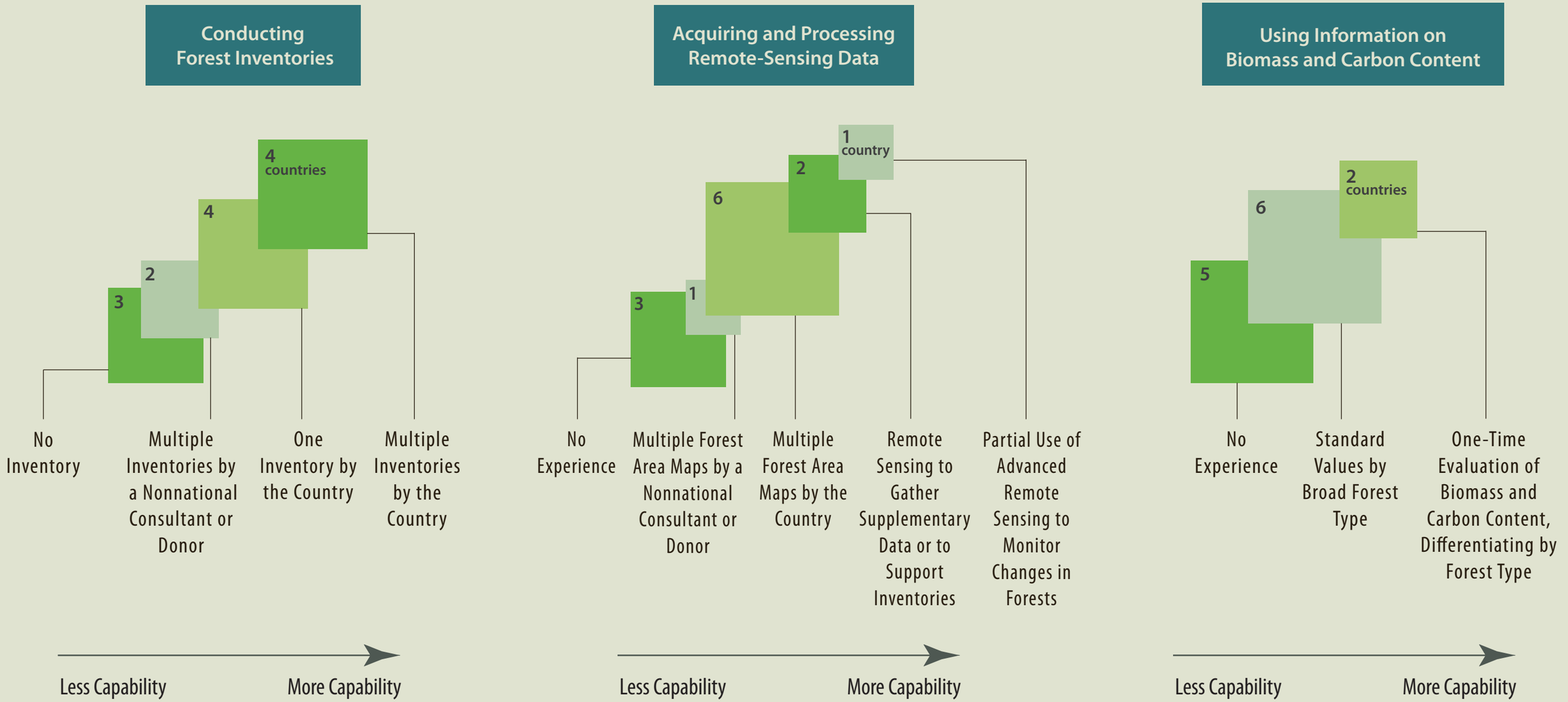


CHALLENGES FOR FOREST-BASED MITIGATION

1 Measuring Changes in Carbon Storage

Many developing nations lack the technical capacity to measure carbon changes over time. Some evidence of the ability to measure such changes is available for 13 of the 25 countries that made the largest contribution to forest-based emissions from 1990 to 2005.

Capability of Developing Countries to Collect and Process Data



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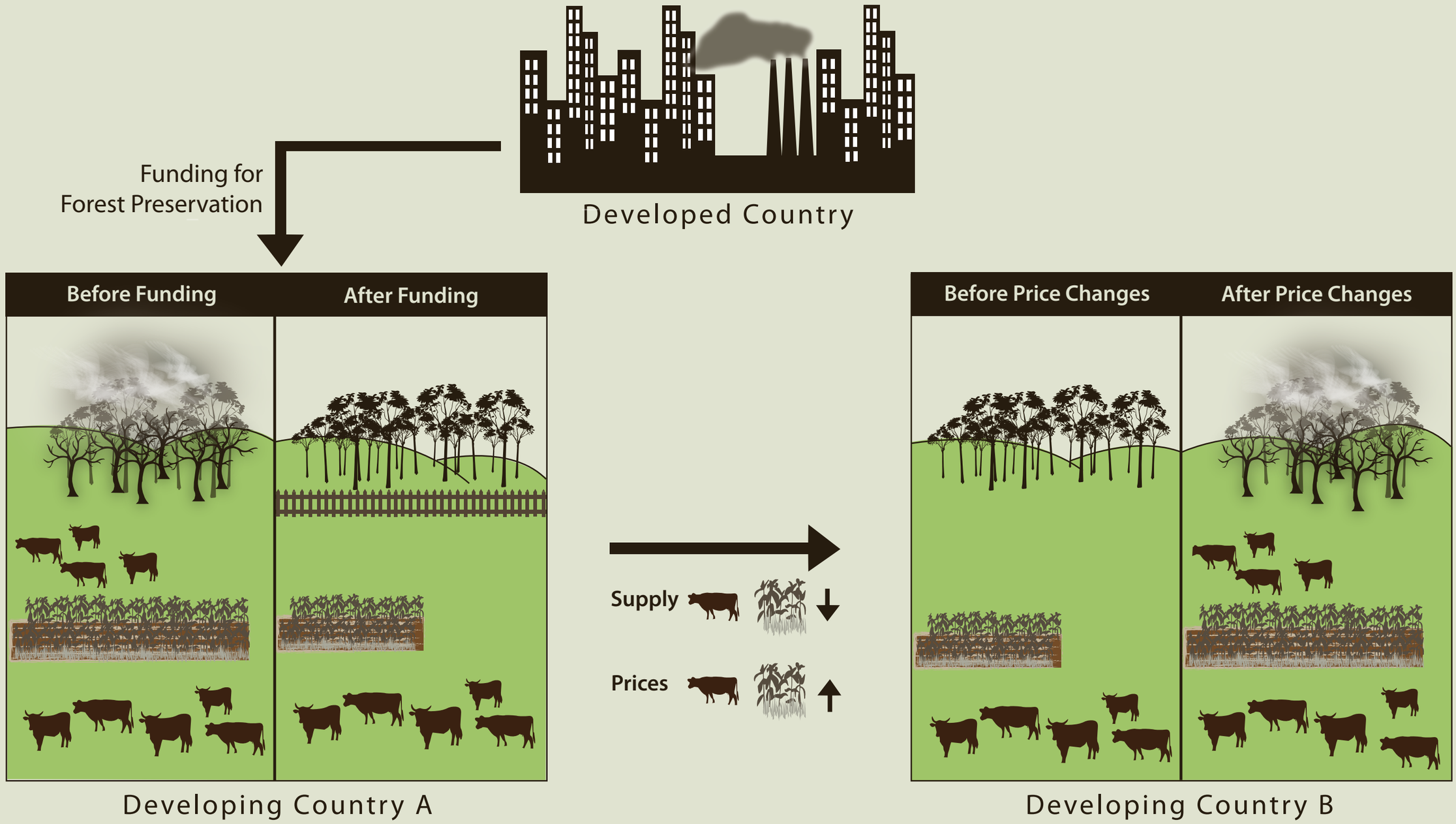
2 Structuring Incentives to Reduce Total Forest-Based Emissions

Funding forest preservation in some countries can create incentives to increase deforestation elsewhere. For example, if a country preserves forests by halting the clearing of land for agriculture, the drop in supply of agricultural products may cause prices to rise. The higher prices may prompt landowners in other countries to clear their forests for agricultural production.

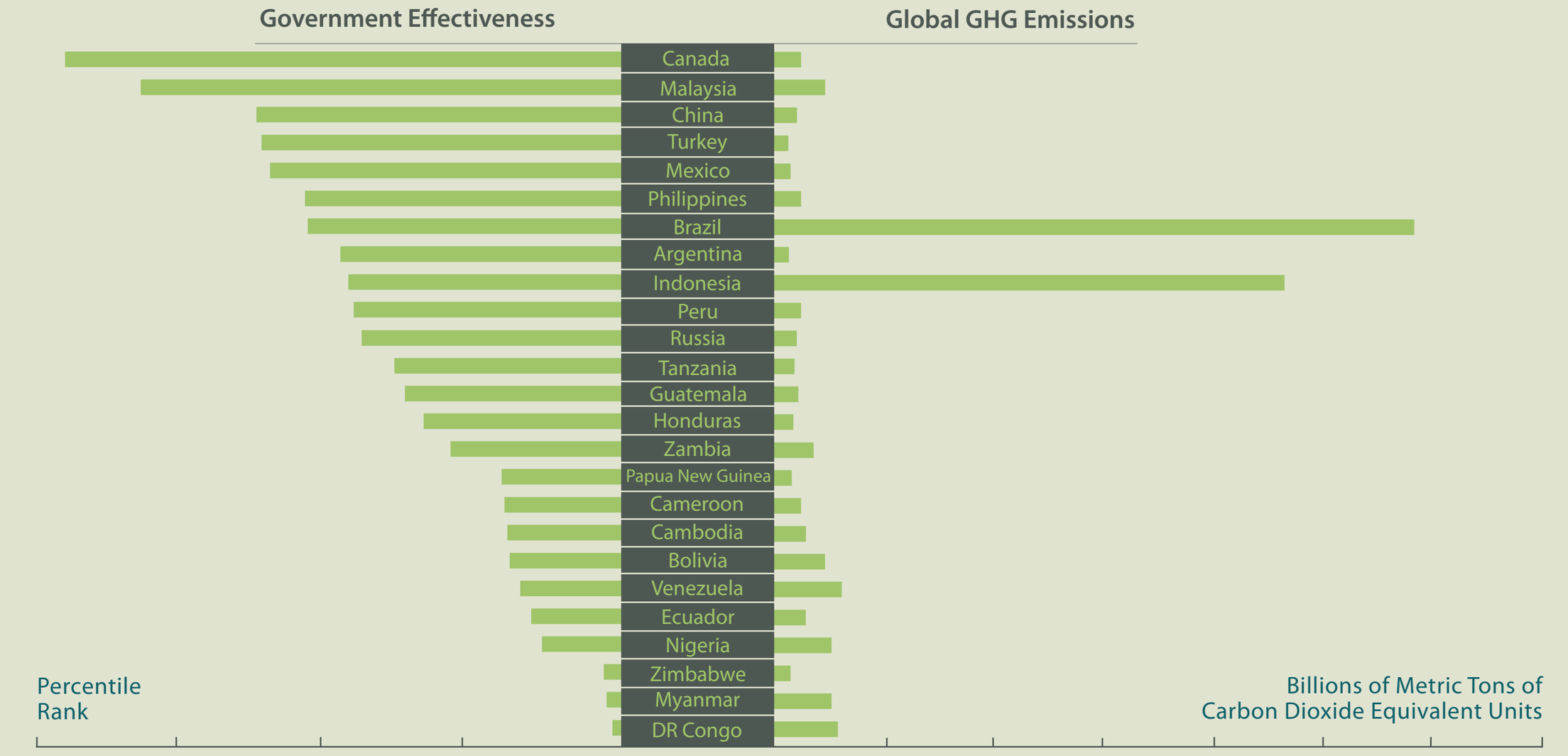
Possible Unintended Consequences of Funding Forest Preservation Only in Some Countries



3 Improving Government Effectiveness in Developing Countries

The inability of governments to successfully design and implement policies to achieve stated objectives undermines national efforts to reduce emissions. Of the top 25 emitters from 1990 to 2005, 18 ranked in the bottom half of all countries in government effectiveness.

Government Effectiveness in Countries Responsible for 95% of Global Forest-Based Emissions, 1990 to 2005



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POSSIBLE POLICY APPROACHES

Providing financial and technical assistance and creating markets for trading reductions in forest-based emissions are two approaches the United States and other developed countries might take to support forest preservation in tropical developing countries. Although the two policies can be pursued independently, they might work better in tandem.

Financial and Technical Assistance

Financial and technical assistance could help countries develop the capabilities to collect and process useful data on their forest resources and related emissions.

Widely compensating forest preservation could reduce the risk that preservation in some locations will create incentives to increase deforestation in others.

Whether such assistance could improve forest governance is less clear.

Initially directing assistance toward countries with relatively strong governance and a large area of threatened forestland, such as Brazil and Indonesia, might be part of an effective strategy.

Markets

Cap-and-trade programs or taxes on GHG emissions could create private markets for forest-based GHG reductions that have the potential to generate greater funding for forest preservation.

Reducing deforestation in developing countries might make it less expensive for the United States to achieve its own goals for reducing GHG emissions.

Authors: Jonathan Schwabish, Natalie Tawil, and Courtney Griffith
Sources: Congressional Budget Office based on information from the World Bank; World Resources Institute; Resources for the Future and Climate Advisers; and LTS International. For more detailed information and citations, see Congressional Budget Office, *Deforestation and Greenhouse Gases* (January 2012).